was a lobular pneumonia from which a pure culture of pneumococcus was obtained, while clinically the pulmonary involvement preceded the symptoms of peritonitis.

SURGERY.

UNDER THE CHARGE OF

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The Surgical Treatment of Epilepsy.—J. Chalmers Da Costa (*Medicine*, February, 1904), in an admirable review of this subject, states that in determining upon the course of treatment for a person suffering with epilepsy due consideration should be given to the possibility of effecting cure by or of obtaining benefit from a surgical operation. An opinion to be of value must emanate from some one who possesses a scientific knowledge of epilepsy and has examined the patient with painstaking care; who has secured an accurate history of the sufferer's previous life, of his diseases and accidents, of his hereditary tendencies, and of the exact character of his convulsive seizures, and, finally, the decision should be made by one who has a surgical conscience. Operating without conscience is not only ruin of the soul; it is often the ruin of the patient, and it is always to the infinite disgrace of the medical profession. It is known that epilepsy is quite common, but exactly how common is somewhat uncertain. According to Spratling, in the United States one person out of every five hundred of population is epileptic, and in Europe the proportion is slightly less.

The surgeon must always bear in mind that many and quite different causes have been assigned for epilepsy, and that our conception of the pathology of the disease is not an established certainty, but rather a probability or a guess. The conclusions that one should draw from the views of modern students are that epilepsy is a diffuse lesion of the cortex of the brain, and that the conditions pointed out as causative may not infrequently be the result of the disease. Epilepsy is usually regarded as without danger to life, but Spratling points out that in this disease there is a distinct tendency to sudden death. Occasionally, though very rarely, patients recover from epilepsy without any treatment at all. If cases are treated early and carefully, and are placed under proper control, from 8 to 10 per cent. may be cured, but if the attacks have lasted over two years or have been very violent there is almost no hope of effecting a cure by medicine. Thus it may be seen that we are dealing with a distressing and usually incurable disease, which, as a rule, unfits the patient for duties of active life, and which, as a general thing, gradually drags him into the ruin of dementia. In such a dreadful condition there is every justification for the performance of operation, if operation even offers a chance. All sorts of methods of treating this disease have been adopted in the past, and every few weeks a new method is suggested. There is scarcely a drug in the *Pharmacopœia*, there is hardly a material in the vegetable world or in the mineral kingdom that has not been at some time or other employed and lauded. Although modern medical treatment has been somewhat more successful than the ancient plans, epilepsy is still with us to a fearful extent.

In setting forth the surgical treatment of epilepsy the author states that he will not discuss the various peripheral operations that may be performed with the idea of eliminating a focus of irritation or of intercepting some irritant impulse. That such operations are occasionally beneficial is undoubted. The author has seen great improvement or apparent cure follow the removal of a tender cicatrix and follow the performance of circumcision in a case of phimosis. Nevertheless, the curative influence of such operations is occasional rather than common, and it is the purpose of this article to dwell particularly upon operations upon the skull and brain. The confidence in the curative value of brain operations in epilepsy has very much diminished in recent years; in the author's opinion less than 5 per cent. are cured by this means. Previous observers have been deceived by the fact that any operative traumatism may for a time improve, and even greatly improve the manifestations of the epileptic condition. This phase of the question was most ably presented some years ago by Dr. J. William White in his well-known article upon the curative effects of the operation *per se*. A case should not be reported as cured until at least three years have elapsed since the operation was performed, and five years is probably a safer limit. Operation in any case should only be resorted to after a most careful study of the patient, and preferably a neurologist should be associated with the surgeon in making this examination. Then, too, the patient should be under observation for some days by either a physician or a nurse, so that the convulsion and sequelæ may be accurately noted in writing, and this report should prove of great help in reaching a conclusion. From a surgical standpoint epilepsy should be classified into different forms, in some of which operative interference is distinctly contraindicated, for the reason that it not only does not do any good, but in some cases may make the patient distinctly worse. 1. Idiopathic epilepsy: Uncomplicated cases of essential epilepsy should not be operated upon, because operation will never bring about a cure. However, if an epileptic suffers with persistent localized headache, it is justifiable to trephine, to open the dura, and to inspect the brain. Even if no cause for the headache be discovered the patient may often be relieved or cured of the pain. In such a case an osteoplastic resection should not be performed, and the trephine button should not be replaced. In status epilepticus the cerebral pressure is notably increased, and trephining with drainage of the ventricle is justifiable to relieve pressure that might cause death. Operation in ordinary essential epilepsy for the relief of the increased intracerebral pressure, as recommended by Kocher, has the objection that there is the danger not only of infection but also of hernia cerebri, and, as Clark has pointed out, this excessive intracerebral pressure is a result rather than a cause of epilepsy. Jaboulay's operation of the excision of the cervical ganglia of the sympathetic for the relief of essential epilepsy has not been followed by very brilliant results. Winter has collected 122 cases, in one-half of which there was no apparent improvement. 2. Idiopathic epilepsy with focal symptoms: Many of these cases, which begin within the first two years of life, are due to unrecognized cerebral infantile palsy. If, from the very start, the convulsive attacks have had a local beginning, and if the surgeon has seen the case within two years of the first attack, it is proper to trephine and excise the irritated portion of the cortex. This is true whether the convulsions remain partial or spread to the rest of the body, and whether consciousness is lost or not. Operations in children are more hopeful than in adults. After the condition has persisted for two years, however, operation offers practically no hope of cure, as the association fibres are by that time hopelessly degenerated. In performing this operation it is impossible to avoid removing more of the cortex than merely the excited centres of the motor region. After the operation there is, of necessity, paralysis of the parts controlled by the extirpated centres. This paralysis is usually first temporary, though the finer movements are never regained. The earlier the operation is done the better is the prognosis. In these cases an osteoplastic operation should be performed. In those cases of genuine essential epilepsy in which after a time the convulsions have taken on a focal character operation offers no hope of curing the disease, although even in these cases operation may become necessary if the great frequency of the attacks produces exhaustion and threatens life. Again, it is possible that in a case of essential epilepsy a gross cortical lesion may develop and may lead to the production of Jacksonian seizures. In such a case one might be driven to operate for the gross lesion, without having any hope of curing the generalized epilepsy. 3. Traumatic epilepsy: When epilepsy ensues upon traumatism the attacks frequently do not begin until some months or a year or more have elapsed; in fact, several years may elapse between the time of the injury and that of the development of epilepsy. An injury may be followed by generalized epilepsy or by Jacksonian epilepsy. The more time that has elapsed between the reception of the injury and the performance of the operation the worse is the prognosis. Traumatic Jacksonian epilepsy gives a better prognosis from operation than does any other form of the disease; where there is a distinct neurotic history the prognosis is worse than when such a history is absent. The prognosis is much better in the Jacksonian than in the generalized form. Every operation in traumatic epilepsy is exploratory. Any obvious lesion should be extirpated, but if nothing be found on exploration, and if the attacks have been distinctly focal in origin, it is justifiable to extirpate the motor centre from which the discharge seems to originate. When the injury is in the motor region the chances of cure are much better than when the sensory region is involved, but when the frontal region has been the seat of injury operation offers very little hope of cure. 4. Jacksonian epilepsy due to gross brain disease: This condition demands the treatment of the underlying brain disease. 5. Epilepsy following infantile cerebral palsy: In the cases associated with congenital cerebral palsy operation in childhood is justifiable, but not promising; but when the patient has reached adolescence operation is useless. 6. The posthemiplegic epilepsy of adults: In these cases operation is entirely valueless.

The conclusions deducible from the preceding remarks are as follows: 1. Operations for epilepsy are distinctly disappointing and rarely curative, and are indicated in only a small proportion of cases. 2. They frequently produce temporary benefit. 3. They may save life, but they are not entirely free from danger, and occasionally leave the patient worse than before. 4. The mortality, though small, is not inconsiderable. 5. The actual number of complete recoveries is probably under 5 per cent. 6. No case should be claimed to have been cured until from three to five years have elapsed since the operation. 7. Even after operation medical treatment and supervision should be exercised for a long period of time.

THERAPEUTICS.

UNDER THE CHARGE OF

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Adrenalin in Ocular Therapeutics.—M. DARIER, at a meeting of the Société d'Ophthalmologie de Paris, spoke as follows of the use of this drug in ophthalmology: As a means of diagnosis of beginning iritis it is very useful when there is hesitancy in instilling atropine. By means of it episcleritis may be easily differentiated from pustule of the limbus. Certain doubtful forms of conjunctivitis may be recognized as granular by its use. From a therapeutic point of view, adrenalin exaggerates the action upon the eye of the various alkaloids; cocaine anæsthetizes an inflamed eye without otherwise affecting the organ if adrenalin has been first applied. Combined with it, cocaine will render great service in conjunctivitis and lessens the pain of topical applications as well. Its use makes catheterization of the tear-duct unnecessary, for a simple injection does away with the stenotic action of the mucous membrane. When eserine or atropine fail in their usual action upon the pupil, combination with adrenalin obviates the difficulty. Its use facilitates operations upon the conjunctiva because of the ischæmia which it produces, but after iridectomy its employment may be followed by hemorrhage into the anterior chamber. In corneal lesions, such as ulcerations, it should not be used, but in episcleritis it produces excellent results.—*Revue de thérapeutique*, 1904, No. 9, p. 313.

Adrenalin in Glaucoma.—DR. GRANDCLÉMENT reports an instance of severe and marked glaucoma cured by this agent. The treatment consisted in the instillation into the affected eye every half hour for three consecutive days of a 1:5000 solution of adrenalin. The course and outcome of this case encourage the belief that it may be possible to cure the various forms of glaucoma by this simple means,